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ROBERT DOLAN

19 January 1984



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This report provides an up-to-date listing of IOS Bidston's publica-	
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The UK's Institute of Oceanographic Sciences (IOS) is at four sites in central and southern England (Figure 1). Two of the centers, those at Wormley and concentrate on Hambledon, deep physics, chemistry, geology, geophysics, and biology. The group at Taunton is concerned mainly with sedimentary processes, coastal geomorphology, and applied wave research. At Bidston, the research program is directed toward investigation of oceanic and continental shelf tides and dynamics of shelf seas.

The Bidston Observatory (Birkenhead, Merseyside L43 7RA) has a long and distinguished history of research on oceanic and earth tides. In fact, one of its most important duties is to provide tide tables for all of the UK and Australia. In addition, the professional staff is conducting research on extreme sea levels, long-term sea level changes, and the production of extreme storm surges.

Below is the up-to-date (1979-83) listing of IOS Bidston's publications. IOS's computerized bibliography is reproduced here because many of the publications are in journals and report series that are not routinely available to oceanographers in North America.

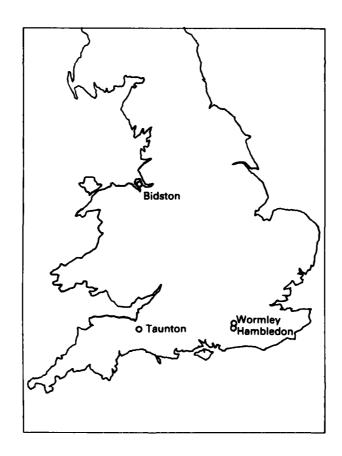


Figure 1. Sites of IOS centers.



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imbed Predtica ALCOCK, G.A. & CARTHRIGHT, D.E. 1982
Computation of the sea surface topography.
pp.29-38 in, Validation of SEASAT-1 altimetry using ground truth in the North Sea region, (ed.J.Brennecke, D.Lelgemann, W.Torge & H.G.Wenzel).
Deutsche Geodatische Kommission, Reihe B: Anjewandte Geodasie, No.263, 113pp. & appendix.

AMIN, M. 1979
A note on extreme tidal levels.
International Hydrographic Review, 56(2), 133-141.

AMIN, M. & GRAFF, J. 1980

Some notes on simplifying the HSWC method of tidal analysis.

International Hydrographic Review, 57(2), 167-174.

AMIN, N. 1982
On analysis and forecasting of surges on the west coast of Great Britain.
Geophysical Journal of the Royal Astronomical Society, 68, 79-94.

AMIN, M. 1932
On analysis and prediction of tides on the west coast of Great Britain.
Geophysical Journal of the Royal Astronomical Society, 68, 57-78.

AMIN, M. 1983
On the perturbations of harmonic constants in the Thames Estuary.
Geophysical Journal of the Royal Astronomical Society, 73, 587-603.

BAKER, T.F. 1980
Tidal gravity in Britain: tidal loading and the spatial distribution of the marine tide.
Geophysical Journal of the Royal Astronomical Society, 62, 249-267.

HAKER, T.F. 1980
Tidal tilt at Llanrust, North Wales: tidal loading and earth structure.
Geophysical Journal of the Poyal Astronomical Society, 6?, 267-290.

BAKER, T.F., EDGE, R.J. & JEFFRIES, G. 1981
High precision tidal gravity. (Interim scientific report, 1
April 1980 - 31 March 1981, prepared for the Institute of
Oceanographic Sciences and the European Office of Acrospace
Research and Development.
U.S. Air Force Geophysics Laboratory, Technical Report,
AFGL-TR-81-0339, 24pp. (Unpublished manuscript).

BAKER, T.F., EDGE, R.J. & JEFFRIES, G. 1982
High precision tidal gravity. (Final report, 1 April - 31 March 1982).
U.S. Air Force Geophysics Laboratory, Technical Report,
AFGL-TP-82-0163, 18pp. (Unpublished manuscript).

- BAKER, T.F. & SCHULLER, K. 1982

  Earth tide and ocean load tide corrections in geodynamics.
  p.221 in, Proceedings of the general meeting of the
  International Association of Geodesy, Tokyo, 1982
  (ed.I.Nakagawa, K.Kasahara & T.Tanaka). Abstract.
  Japan: Geodetic Society of Japan. 734pp.
- HAKER, T.F. & ALCOCK, G.A. 1983

  Time variation of ocean tides.

  pp. 341-350 in, Proceedings of the ninth international symposium on earth tides, (ed.J.T.Kuo), New York City, August 17-22, 1981.

  Stuttgart: E.Schweizerbart\*sche Verlagsbuchhandlung, 747pp.

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- BLACKMAN, D.L., GRAFF, J. & VASSIE, J.M. 1981
  Tidal currents in Yell Sound and the outer regions of Sullom Voe.
  Proceedings of the Royal Society of Edinburgh, B, 80, 73-90.
- CARR, A.P. % GRAFF, J. 1982
  The tidal immersion factor and shore platform development:
  discussion.
  Transactions of the Institute of British Geographers, N.S., 7, 240-245.
- CARTWRIGHT, D.E. 1979
  Analyses of British Antarctic Survey tidal records.
  British Antarctic Survey Bulletin, No.49, 167-179.
- CARTWRIGHT, D.E., ZFTLER, B.D. & HAMON, B.V. 1979
  Pelagic tidal constants. (Compiled by the IAPSO Advisory
  Committee on Tides and Mean Sea Level).
  Publication Scientifique, International Association for the
  Physical Sciences of the Ocean, No.30, 65pp.
- CARTWRIGHT, D.E. 1979
  Tidal theory.
  Canada, Department of Fisheries and the Environment, Marine Sciences Directorate, Manuscript Report Series, No.53, 35-38.
  (Unpublished manuscript).
- CARTWRIGHT, D.E. 1989
  The historic development of tidal science and the Liverpool Tidal Institute.

  pp.240-251 in, Oceanography: the past, (ed.M. Sears & D.Merriman). (Proceedings 3rd international congress on the history of oceanography, Woods Hole, Mass., 22-26 September 1989).

  New York: Springer-Verlag. 812pp.
- CARTWRIGHT, D.F., HUTHNANCE, J.M., SPENCER, R. & VASSIE, J.M. 1980 On the St.Kilda Shelf tidal regime. Deep-Sea Research, 27A, 61-7D.
- CARTWRIGHT, D.E., EDDEN, A.C., SPENCER, R. & VASSIE, J.M. 1980 The tides of the northeast Atlantic ocean. Philosophical Transactions of the Royal Society of London, A., 208, 37-139.

CARTWRIGHT, D.E. S ALCOCK, G.A. 1981
On the precision of sea surface elevations and slopes from SEASAT altimetry of the northeast Atlantic Ocean.
pp.335-395 in, Oceanography from space, (el.J.F.R.Gower).
(Proceedings of COSPAR/SCOR/IUCRY symposium, 1980, Venice).
New York: Plenum, 978pp.

CARTWRIGHT, D.E. 1982

Processes in marine remote sensing - radar altimetry of the sea surface.

pp.107-111 in, Processes in marine remote sensing,

(ed.F.J.Vernberg & F.P.Diemer).

University of South Carolina Press. 545pp.

CARTWRIGHT, D.E. 1982
The tidal signal in inverted echo-sounder records.
Deep-Sea Research, 29A, 767-784.

CARTWRIGHT, D.F. 1982
Tidal analysis — a retrospect.
pp.170-183 in, Time series methods in hydrosciences, (ed. A.H.El-Shaarawi & S.R.Esterby).
Amsterdam: Elsevier. 614pp.

CARTWRIGHT, D.E. 1983
The I.O.S. program of tidal definition in the north Atlantic Ocean.

pp.351-358 in, Proceedings of the ninth international symposium on earth tides, (ed.J.T.Kuo), New York City, August 17-22, 1981.

Stuttgart: E.Schweizerbart'sche Verlagsbuchhandlung, 747pp.

CARTWRIGHT, D.E. & ALCOCK, G.A. 1983
Altimeter measurements of ocean topography.
pp.309-319 in, Satellite microwave remote sensing,
(ed.T.D.Allan).
Chichester: Ellis Horwood, 526pp.

CARTWRIGHT, D.E. 1983

Detection of large-scale ocean circulation and tides. Philosophical Transactions of the Royal Society of London, A, 309, 361-370.

(Royal Society discussion meeting on 'The study of the ocean and the land surface from satelli es', held 10-11 November, 1982).

CARTWRIGHT, D.F. 1783
On the smoothing of climatological time series, with application to sea-level at Newlyn.
Geophysical Journal of the Royal Astronomical Society, 75, 677-653.

CARTWRIGHT, D.E. 1983
Letter to the Editor. (Concerning tidal conditions at specified places and dates in the historic past).
Hydrographic Journal, No.30, p.33.

#### CARTWRIGHT, D.E. 1983

Work on SEASAT altimetry at the Institute of Oceanographic Sciences, Bidston, United Kingdom, pp.5-2 - 5-11 in, Report of the NASA workshop on tidal research, (ed.M.E.Parke & D.B.Rao). California Institute of Technology, Jet Propulsion Laboratory, JPL Publication 83-71, (51pp).

#### (CARTWRIGHT, D.F.) 1783

The sun-synchronous orbit.

pp.3-1 - 3-2 in, Report of the NASA workshop on tidal research, (ed.M.E.Parke % D.B.Rao).

California Institute of Technology, Jet Propulsion Laboratory, JPL Publication 83-71, (51pp).

#### (CARTWRIGHT, D.E.) 1983

Tides and satellite data.

pp.2-1 - 2-5 in, Report of the NASA workshop on tidal research, (ed.M.E.Parke & D.B.Rao).

California Institute of Technology, Jet Propulsion Laboratory, JPL Publication 33-71, (51pp).

#### DAVIES, A.M. 1979

Comparison of computed and observed residual currents during JONSDAP 176: preliminary results. International Council for the Exploration of the Sea, ICES C.M.1979/C:40, Hydrography Committee. 10pp. & figs. (Unpublished manuscript).

#### DAVIES, A.M. 1979

Role of 2D and 3D models in JONSDAP 176. pp.1035-1103 in vol.1, Proceedings of the sixteenth coastal engineering conference, 1978, Hamburg, Germany, 3 vols. New York: American Society of Civil Engineers, 3060pp.

#### DAVIFS, A.M. & OWEN, A. 1979

Three-dimensional numerical sea model using the Galerkin method with a polynomial basis set.

Applied Mathematical Modelling, 3, 421-428.

#### DAVIES, A.M. 1980

Application of the Galerkin sthod to the formulation of a three-dimensional nonlinear hydrodynamic numerical sea model. Applied Mathematical Modelling 4, 245-256.

#### DAVIES, A.M. 1980

Application of numerical models to the computation of the wind induced circulation of the North Sea during JOHSDAP \*76. \*Meteor\* Forschungsergebnisse, A, No.22, 53-68.

#### DAVIES, A.M. 1930

On formulating a three-dimensional hydrodynamic sea model with an arbitrary variation of vertical eddy viscosity. Computer Methods in Applied Mechanics and Engineering, 22, 187-211.

#### DAVIES, A. T. & HEAPS, N.S. 1980

Hydrodynamic modelling of stratified flows. (Abstract). pp.579-581 in Proceedings of 2nd international symposium on stratified flows. Trondheim. 24-27 June 1980. (ed.T.Carstens & T.McClimans). Trondheim: Tapir. 1095pp.

- DAVIES, A.M. & HEAPS, N.S. 1980 Influence of the Norwegian Trench on the wind-driven circulation of the North Sea. Tellus, 32, 164-175.
- DAVIES, A.M. & HEAPS, N.S. 1980

  Note on the use of field data to test and verify North Sea models.

  International Hydrographic Review, 57(1), 119-134.
- DAVIES, A.M. 1980

  Numerical sea model with two-dimensional and three-dimensional regions dynamically connected.

  Deutsche Hydrographische Zeitschrift, 33, 19-37.
- Observed and computed M2 tidal currents in the North Sea.

  Journal of Physical Oceanography, 10, 237-257.
- DAVIES, A.M. 1981
  Three dimensional hydrodynamic numerical models. Part 1. A homogeneous ocean-shelf model. Part 2. A stratified model of the northern North Sea.

  pp.370-426 in vol.2, The Norwegian Coastal Current, (ed.R.Saetre & M.Mork).

  Rergen University. 795pp.
- DAVIES, A.M. 1981
  Three-dimensional modelling of surges.
  pp.45-74 in, Floods due to high winds and tiles,
  (ed.D.H.Peregrine).
  London: Academic. 109pp.
- DAVIES, A.M. 1982

  Formulating a three-dimensional hydrodynamic sea model using a mixed Galerkin-finite difference method.

  pp.5-27 5-41 in, Finite elements in water resources, (ed.K.P.Holz, U.Teissner, M.Z.elke, C.A.Brebbia, G.Pinder & W.Gray). (Proceedings of the 4th international conference, Hannover, Germany, June 1932).

  Berlin: Springer-Verlag/Computational Mechanics Centre. 1096pp.
- DAVIES, A.M. 1982

  Meteorologically-induced circulation on the north west European continental shelf: from a three-dimensional numerical model.

  Oceanologica Acta, 5, 269-280.
- DAVIES, A.M. 1982
  On computing the three-dimensional flow in a stratified sea using the Galerkin method.
  Applied Mathematical Modelling, 6, 347-362.
- DAVIES, A.M. 1982
  Application of a Galerkin-eigenfunction method to computing currents in homogeneous and stratified seas.

  pp.287-301 in, Numerical methods for fluid dynamics, (ed.K.W.Morton & M.J.Baines).

  London: Academic. 517pp.

DAVIES, A.M. 1983

Application of a three-dimensional shelf model to the calculation of North Sea currents.

pp.44-62 in, North Sea dynamics, (ed.J.Sundermann & W.Lenz).

Berlin: Springer-Verlag. 673pp.

DAVIES, A.M. 1983

Formulation of a linear three-dimensional hydrodynamic sea model using a Galerkin-eigenfunction method.

International Journal for Dumerical Methods in Fluids, 3, 33-60.

DAVIES, A.M. & JAMES, I.D. 1983

Three-dimensional Galerkin-spectral sea models of the North Sea and German Bight.

pp.85-94 in, North Sea dynamics, (ed.J.Sundermann & W.Lenz).

Berlin: Springer-Verlag. 693pp.

DAVIES, A.M. 1983

Numerical modelling of North Sea currents and water levels. In volume C2, Offshore Gotebory 83, international conference on offshore and marine technology. Session C: the ocean environment and its interaction with offshore structures, Gothenburg, Sweden, March 1-4, 1983. Goteborg, Sweden: Swedish Trade Fair Foundation. 4 vols.

DAVIES, A.M. 1983

Three-dimensional numerical models of currents. MIAS News Bulletin, No.6, 2-3.

DAVIES, A.M. & STEPHENS, C.V. 1983

Comparison of the finite difference and Galerkin methods as applied to the solution of the hydrodynamic equations. Applied Mathematical Modelling, 7, 226-240.

DAVIES, A.M. 1983

Three dimensional models of North Sea circulation. pp.65-21 in/ Coastal oceanography/ (ed.H.G.Gade/ A.Edwards & H.Svendsen). (Proceedings of a NATO Advanced Research Institute on Coastal Oceanography/ June 6-11/ 1982/ Os/ Norway.)

New York: Plenum. 582pp.

(NATO Conference Series IV: marine sciences).

DAVIES, A.M. 1983

Outcome of mathematical models.

pp.112-141 in, Flushing times of the North Sea.

International Council for the Exploration of the Sea,
Cooperative Research Report, No.123, 159pp.

DAVIES, A.M. 1983

Comparison of computed and observed residual currents during JONSDAP '76. pp.387-400 in, Physical oceanography of coastal and shelf seas, (ed.B.Johns). Amsterdam: Elsevier.

EDGE, P.J., BAKER, T.F. & JEFFRIES, G. 1979

Earth tides: tilt in the English Lake District.

pp.261-268 in, Terrestrial and space techniques in earthquake prediction research, vol.1, (ed.A.Vogel). (Proceedings of the international workshop on monitoring crustal dynamics in earthquake zones, Strasbourg, 1978).

Braunschweig/Wiesbaden: F.Vieweg & Sohn. 712pp.

- EDGE, R.J., BAKER, T.F. & JEFFRIES, G. 1981
  Borehole tilt measurements: aperiodic crustal tilt in an aseismic area.
  Tectonophysics, 71, 97-109.
- EDGE, R.J., BAKER, T.F. & JEFFRIES, G. 1982
  Towards an understanding of tilt measurements. (Abstract of paper presented at the 6th U.K. Geophysical Assembly, 5-7 April 1932, University College Cardiff).
  Geophysical Journal of the Royal Astronomical Society, 69, p.296.
- EDGE, R.J., RAKER, T.F. & JEFFRIES, G.J. 1983

  Some results from simultaneously recording borehole tiltmeters. pp.7-16 in, Proceedings of the ninth international symposium on earth tides, (ed.J.T.Kuo), New York City, August 17-22, 1981. Stuttgart: E.Schweizerbart'sche Verlagsbuchhandlung. 747pp.
- EVANS, J.J. 1982
  Tiles in the Bristol Channel. (Abstract of paper presented at the 6th U.K. Geophysical Assembly, 5-7 April 1982, University College Cardiff).
  Geophysical Journal of the Ro, at Astronomical Society, 69, p. 296.
- EVANS, J.J. & PUGH, D.T. 1982
  Analysing clipped sea-level records for harmonic tidal constituents.
  International Hydrographic Review, 59(2), 115-122.
- FLATHER, R.A. 1979
  Recent results from a storm surge prediction scheme for the North Sea.
  pp.385-409 in, Marine forecasting, (ed.J.C.J. Nihoul).
  (Proceedings of the 10th international Liege colloquium on ocean hydrodynamics, 1978).
  Amsterdam: Elsevier. 493pp.
- FLATHER, R.A. 1981

  Practical surge prediction using numerical models.

  pp.21-43 in, Floods due to high winds and tides,

  (ed.D.H.Peregrine).

  London: Academic. 109pp.
- FLATHER, R.A. 1981
  Results from a model of the north east Atlantic relating to the Norwegian Coastal Current.
  pp.427-45% in vol.2, The Norwegian Coastal Current, (ed.R.Saetre & M.Mork).
  Bergen University, 795pp.

FLATHER, R.A. 1981
Storm-surge prediction using numerical models.
pp.659-687 in, Monsoon dynamics, (ed.M.J. Lighthill & R.Pearce).
Cambridge University Press, 735pp.

- FLATHER, R.A. & PROCTOR, R. 1983

  Prediction of North Sea storm surges using numerical models:
  recent developments in the U.K.
  pp.299-317 in, North Sea dynamics, (ed.J.Sundermann & W.Lenz).
  Berlin: Springer-Verlag. 693pp.
- GRAFF, J. & BLACKMAN, D.L. 1977

  Analysis of maximum sea levels in southern England.

  pp.931-948 in vol.1, Proceedings of the sixteenth coastal engineering conference, 1978, Hamburg, Germany, 3 vols.

  New York: American Society of Civil Engineers, 3060pp.
- GRAFF, J. 1979

  Concerning the recurrence of abnormal sea levels.

  Coastal Engineering, 2, 177-137.
- GRAFF, J. & KARUNARATNE, D.A. 1980
  Accurate reduction of sea level records.
  International Hydrographic Review, 57(2), 151-166.
- GRAFF, J. & OVADIA, D.C. 1980
  Towards improving our understanding of the occurrence of high seas at Liverpool.
  Hydrographic Journal, No.1%, 19-29.
- GRAFF, J. 1981
  An investigation of the frequency distribution of annual sealevel maxima at ports around Great Britain.
  Estuarine, Coastal and Shelf Science, 12, 389-449.
- GRAFF, J. 1981

  Long term statistics of extreme sea levels. Abstract.
  p.107 in, Floods due to high winds and tides,
  (ed.D.H.Peregrine).

  London: Academic. 109p.
- HARRISON, A.J. 1981

  A sea-bed instrument for measurement of current and pressure.

  pp.175-180 in, Proceedings of IERE conference on electronics for ocean technology, Birmingham, September 1931.

  London: Institution of Electronic and Radio Engineers. 348pp.

  (IERE Conference Proceedings No.51).
- HEAPS, N.S. 1979

  Computer models for sea level prediction.

  MIAS News Bulletin, No.2, 19-13.
- HEAPS, N.S. 1979
  Interaction between tide and surge in the Irish Sea. (Abstract of paper presented at the 3rd U.K. Geophysical Assembly, 2-5 April, 1979, University of Southampton).
  Geophysical Journal of the Royal Astronomical Society, 57, p.286.

HEAPS, N.S. 1979
Three-dimensional modelling of the Irish Sea.

pp.2671-2686 in vol.3, Proceedings of the sixteenth coastal engineering conference, 1978, Hamburg, Germany, 3 vols.

New York: American Society of Civil Engineers, 3060pp.

HEAPS, N.S. & JONES, J.E. 1979

Recent storm surges in the Irish Sea.

pp.285-319 in, Marine forecasting, (ed.J.C.J. Nihoul).

(Proceedings of the 10th international Liege colloquium on ocean hydrodynamics, 1978).

Amsterdam: Elsevier. 493pp.

HEAPS, N.S. 1980

Density currents in a two-layered coastal system, with application to the Norwegian Coastal Current.

Geophysical Journal of the Royal Astronomical Society, 63, 289-310.

HEAPS, N.S. 1980
A mechanism for local upwelling along the European continental slope.
Oceanologica Acta, 3, 449-454.

HEAPS, N.S. 1983

Spectral methods for the numerical solution of the three-dimensional hydrodynamic equations for tides and surges. pp.75-90 in, Mathematical modelling of estuarine physics, (ed.J.Sundermann & K.P.Holz). (Proceedings of an international symposium, Hamburg, 24-27 August 1973).

Berlin: Springer-Verlag. 265pp. (Lecture Notes on Coastal and Estuarine Studies, 1, ).

HEAPS, N.S. 1981

Development of a three-layer spectral model for the motion of a stratified sea. (Abstract of paper presented at the 1981 fall meeting, December 7-11, San Francisco).

EOS, Transactions of the American Geophysical Union, 62, p.928.

HEAPS, N.S. 1981 Layered spectral models. Abstract. Ocean Management, 6, p.243.

HEAPS, N.S. 1981
Three-dimensional model for tides and surges with vertical eddy viscosity prescribed in two layers - I. Mathematical formulation.
Geophysical Journal of the Royal Astronomical Society, 64, 291-302.

HEAPS, N.S. & JONES, J.E. 1981
Three-dimensional model for tides and surges with vertical eddy viscosity prescribed in two layers. — II. Irish Sea with bed friction layer.
Geophysical Journal of the Royal Astronomical Society, 64, 303-320.

HEAPS, N.S. 1982

Prediction of tidal elevations : model studies for the Severn

barrage.

pp.51-58 in, Severn barrage. (Proceedings of a symposium organised by the Institution of Civil Engineers, London, 8-9 .October, 1981).

London: Thomas Telford. 240pp.

HEAPS, N.S., MORTIMER, C.H. & FEE, E.J. 1982

Numerical models and observations of water motion in Green Bay, Lake Michigan.

Philosophical Transactions of the Royal Society of London, A, 306, 371-398.

HEAPS, N.S. 1982

Storm-surge forecasting for the east and west coasts of the British Isles: scientific development and practical method. pp.219-234 in, First international conference on meteorology and air-sea interaction of the coastal zone, sponsored by the Royal Netherlands Meteorological Institute and the American Meteorological Society, The rigue, 1982. PREPRINTS. Massachusetts: American Meteorological Society. 404pp.

HEAPS, 4.S. 1983

Storm surges, 1967-1982. Geophysical Journal of the Royal Astronomical Society, 74, 331-376.

HEAPS, N.S. 1983

Hydrodynamical model of a stratified sea. pp.43-64 in/ Coastal oceanography/ (ed.H.G.Gade/ A.Edwards & H.Svendsen). (Proceedings of a NATO Advanced Research Institute on Coastal Oceanography, June 6-11, 1982, Os, Norway). New York: Plenum. 582pp. (NATO Conference Series IV: marine sciences).

HEAPS, N.S. 1983

Development of a three-layered spectral model for the motion of a stratified shelf sea. Basic equations. pp.387-400 in/ Physical oceanography of coustal and shelf seas/ (ed.B.Johns). Amsterdam: Elsevier.

HEAPS, N.S. & JONES, J.E. 1983

Development of a three-layered spectral model for the motion of a stratified sea. II. Experiments with a rectangular basin representing the Celtic Sea. pp.401-465 in Physical oceanography of coastal and shelf sease (ed.B.Johns).

Amsterdam: Elsevier.

HEAPS, 4.S. 1983

North Sea modelling, real time, predictive models. Canadian Technical Report of Hydrography & Ocean Sciences, No.28, p.27.

HOWARTH, M.J. & PUGH, D.T. 1979

Sea level and current variations in the Celtic Sea. (Abstract of paper presented at the 3rd U.K. Geophysical Assembly, 2-5 April, 1979, University of Southampton).

Geophysical Journal of the Royal Astronomical Assembly, 57, p.285.

HOWARTH, M.J. S JONES, J.E. 1981

A comparison of numerical model and observed currents during a storm surge period.

Estuarine, Coastal and Shelf Science, 12, 655-663.

#### HOWARTH, M.J. 1981

Intercomparison of AMF VACM and Aanderaa current meters moored in fast tidal currents.

Deep-Sea Research, 28A, 601-607.

#### HOWARTH, M.J. 1781

An intercomparison of AMF VACMs and Aanderaa RCM4s in a tidally dominated continental shelf sea.

International Council for the Exploration of the Sea, ICES C.M. 1981/C:31, Hydrography Committee, 6pp. & figs. (Unpublished manuscript).

HOWARTH, M.J. & EVANS, J.J. 1982
Calibration of telephone cable flow measurements by recording current meters. (Abstract of paper presented at the 6th U.K. Geophysical Assembly, 5-7 April 1982, University College Cardiff).
Geophysical Journal of the Royal Astronomical Society, 69, p.296.

#### HOWARTH, M.J. 1982

Non-tidal flow in the North Channel of the Irish Sea. pp.205-242 in, Hydrodynamics of semi-enclosed seas, (e.j.,C.,J.Nihoul). (Proceedings of 13th international Liege colloquium on ocean hydrodynamics). Amsterdam: Elsevier. 555pp. (Elsevier Oceanography Series, 34).

#### HOWARTH, M.J. 1982

Tidal currents of the continental shelf. pp.10-26 in Offshore tidal sands (ed.A.H.Stride). London: Chapman & Hall. 222pp.

HOWARTH, M.J. & PUGH, D.T. 1983

Observations of tides over the continental shelf of north-west Europe. pp.135-188 in. Physical oceanography of coastal and shelf seas. (eJ.B.Johns). Amsterdam: Elsevier.

#### HUNTLEY, D.A. 1980

Tides on the north-west European continental shelf. pp.301-351 in. The north-west European shelf seas: the sea bed and the sea in motion. II. Physical and chemical oceanography and physical resources. (ed.f.T.Banner. M.B.Collins & K.S. Massie).

Amsterdam: Elsevier. 638pp.

#### HUTHNANCE, J.M. 1980

Mean currents generated by tides. (Abstract of paper presented at the 4th U.K. Geophysical Assembly, Birmingham University, 14-17 April, 1980). Geophysical Journal of the Royal Astronomical Society, 61, p. 224.

HUTHNANCE, J.M. 1980
On natural oscillations of connected ocean basins.
Geophysical Journal of the Royal Astronomical Society, 61, 337-354.

- HUTHNANCE, J.M. 1930
  On shelf-sea 'resonance' with application to Brazilian M3 tides.
  Deep-Sea Research, 27A, 347-366.
- HUTHMANCE, J.M. 1981

  Large tidal currents near Bear Island and related tidal energy losses from the North Atlantic.

  Deep-Sea Research, 28A, 51-70.
- HUTHNANCE, J.M. 1981

  A note on baroclinic Rossby wave reflection at sea-floor scarps.

  Deep-Sea Research, 28A, 83-91.
- HUTHNANCE, J.M. 1981
  On mass transports generated by tides and long waves.
  Journal of Fluid Mechanics, 102, 367-387.
- HUTHNANCE, J.M. 1981

  Waves and currents near the continental shelf edge.

  Progress in Oceanography, 10, 193-226.
- HUTHNANCE, J.M. & BAINES, P.G. 1932
  Tidal currents in the northwest African upwelling region.
  Deep-Sea Research, 29A, 285-306.
- HUTHNANCE, J.M. 1982
  On one mechanism forming linear sand banks.
  Estuarine, Coastal and Shelf Science, 14, 79-99.
- On the formation of sand banks of finite extent.
  Estuarine, Coastal and Shelf Science, 15, 277-299.
- HUTHNANCE, J.M. 1983
  Sub-tidal motion on the Scottish continental shelf,
  August-September 1971.
  Continental Shelf Research, 1, 221-236.
- HUTHNANCE, J.M. 1983
  Simple models for Atlantic diurnal tides.
  Deep-Sea Research, 30A, 15-29.
- JAMES, I.D. 1979
  Thermocline formation in the Celtic Sea 1978. (Abstract of paper presented at the 3rd U.K. Geophysical Assembly, 2-5 April, 1979, University of Southampton).
  Geophysical Journal of the Royal Astronomical Society, 57, p.286.
- JAMES, I.D. 1930
  Thermocline formation in the Celtic Sea.
  Estuarine & Coastal Marine Science, 10, 597-607.

JAMES, I.D. 1981
Fronts and shelf-circulation models.
Philosophical Transactions of the Royal Society of London, A, 302, 597-604.

JAMES, I.D. 1982 Tidal currents at two deep-sea moorings near the shelf edge. Deep-Sea Research, 29A, 1079-1111.

متا بالمناز والمناز والمناز

- JAMES, I.D. 1983
  A three-dimensional model of shallow-sea fronts.
  pp.173-184 in, North Sea dynamics, (ed.J.Sundermann & W.Lenz).
  Berlin: Springer-Verlag. 693pp.
- JONES, M.T. 1979
  The International Oceanograph: Data Exchange System.
  MIAS News Bulletin, No.2, 4-9.
- JONES, M.T. 1979

  NORSWAM (North Sea Wave Model) output data set.

  MIAS News Bulletin, No.2, 16~18.
- JONES, M.T. 1980

  The IOC general magnetic tape format for the international exchange of nceanographic data. Part 1: technical specification (first edition).

  Intergovernmental Oceanographic Commission, Manuals & Guides, No.9, Annex 1 GF-3, Part 1, 64pp.
- JONES, M.T. 1980 The MIAS current meter inventory. MIAS News Bulletin, No.3, 4-5.
- JOHES, "1.7. % SANKEY, T. 1950

  The MIAS oceanographic database an integrated database / data dictionary system.

  pp.67-75 in, Database achievements, (ed. G.J. Raker).

  London: A.P. Publications Ltd. & Oritish Computer Society.
  123pp.
- JONES, M.T. 1990
  The MIAS oceanographic data hase -the development of a general purpose data structure for serial data.
  International Council for the Exploration of the Sea, ICES C.M. 1990/0:13. 29pp. (Unpublished manuscript).
- JONES, M.T. 1980
  Report of the Working Group on Marine Data Management.
  International Council for the Exploration of the Sea, ICES C.M.
  1980/C:43, p. (Unpublished manuscript).
- JONES, M.T. 107

  Guideling for he submission of oceanographic data to MIAS for banking.

  MIAS News Bulletin, No.4, p.18.
- JOMES, M.T. 1981
  Historical sea surface temperature data project.
  MIAS News Bulletin, No.4, 17-13.

JOVES, M.T. 1981
The National Oceanographic Data Bank. Time series data available from MIAS.
MIAS News Bulletin, No.4, 10-14.

- JONES, M.T. 1981
  Report of the Working Group on Mar he hata Management.
  International Council for the Exploration of the Sea, ICES C.M.
  1981/C:44, Hydrography Committee, 11pp. & figs. (Unpublished manuscript).
- JONES, M.T. 1982
  The IOC general magnetic tape format for the international exchange of oceanographic data Part 2: code tables.
  Intergovernmental Oceanographic Commission, Manuals & Guides, No.9, Annex 1 GF-3, Part 2, 41pp.
- JONES, M.T. 1982
  Report of the Working Group on Marine Data Management.
  International Council for the Exploration of the Sea, ICES C.M.1982/C:23, Hydrography Committee, 22pp (Unpublished manuscript).
- KARUNARATNE, D.A. 1980
  An improved method for smoothing and interpolating hourly sea level data.
  International Hydrographic Review, 57(1), 135-148.
- KATZ, E.J., MOLINARI, R.L., CARTWRIGHT, D.E., HISARD, P., LASS, H.U. & MESQUITA, A. 1981

  The seasonal transport of the Equatorial Undercurrent in the western Atlantic during the Global Weather Experiment.

  Oceanologica Actu, 4, 445-450.
- LASS, H.U., BUBNOV, V., HUTHNANCE, J.M., KATZ, E.J., MEINCKE, J., MESQUITA, A., OSTAPOFF, F. & VOITURIEZ, B. 1983
  Seasonal changes of the zonal pressure gradient in the equatorial Atlantic during the FGGE year.
  Oceanologica Acta, 6, 3-11.
- MCINTYRE, R. 1979
  Analytic models for west coast storm surges, with application to events of January 1976.
  Applied Mathematical Modelling, 3, 89-98.
- O'HORA, N.P.J. & BAKER, T.F. 1979

  Tidal perturbations in astronomical observations.

  pp.67-72 in, Time and the Earth's rotation, (ed. D.D.McCarthy & J.D.Pilkington). (Proceedings of the 82nd International Astronomical Union Symposium, San Fernando, Spain, 1978).

  Dordrecht, Holland: Reidel. 332pp.
- OWEN, A. 1979
  Effect on the M2 tide of permeable tidal barrages in the Bristol Channel.
  Proceedings of the Institution of Civil Engineers, Part 2, Research & Theory, 67, 907-928.
- OWEN, A. 1979
  Effects of tidal barrages in the Bristol Channel on tides and storm surges. (Abstract of paper presented at the 3rd U.K. Geophysical Assembly, 2-5 April, 1979, University of Southampton).
  Geophysical Journal of the Royal Astronomical Society, 57, p.287.

OWEN, A. & HEAPS, N.S. 1979

Some recent model results for tidal barrages in the Bristol Channel.

pp.85-92 in, Tidal power and estuary management, (ed.R.T.Severn, D.Dineley & L.E.Hawker).

Bristol: Scientechnica. 276pp. (Colston Papers No.30).

OWEN, A. 1980
A three-dimensional model of the Bristol Channel.
Journal of Physical Oceanography, 10, 1290-1302.

OWEN, A. 1980.

The tidal regime of the Bristol Channel: a numerical modelling approach.

Geophysical Journal of the Royal Astronomical Society, 62, 59-75.

PERMANENT SERVICE FOR MEAN SEA LEVEL. 1983
Operational sea-level stations.
Intergovernmental Oceanographic Commission, Technical Series, No.23, 40pp.

PRANDLE, D. 1979

Anomalous results for tidal flow through the Pentland Firth.
Nature, 278, 541-542.

PRANDLE, D. 1979

Hydrodynamic modelling of the southern North Sea.

pp.1122-1141 in vol.1, Proceedings of the sixteenth coastal engineering conference, 1978, Hamburg, Germany. 3 vols.

New York: American Society of Civil Engineers. 3060pp.

PRANDLE, D. 1980 Co-tidal charts for the southern North Sea. Deutsche Hydrographische Zeitschrift, 33, 68-81.

PRANDLE, D. 1980

Modelling of tidal barrier schemes: an analysis of the open-boundary problem by reference to AC circuit theory.

Estuarine % Coastal Marine Science, 11, 53-71.

PRANDLE, D. 1980
Recordings of flow through the Pentland Firth using submarine telephone cables.
'Meteor' Forschungsergebnisse, A. No.22, 33-42.

PRANDLE, D. & RAHMAN, M. 1980

Tidal response in estuaries.

Journal of Physical Oceanography, 10, 1552-1573.

PRANDLE, D. 1981
Salinity intrusion in estuaries.
Journal of Physical Oceanography, 11, 1311-1324.

PRAIDLE, D. 1981

Tidal power schemes in the Bay of Fundy and Bristol Channel.

pp.397-409 in, 2nd International symposium on wave and tidal energy, Cambridge, 23-25 September, 1981, organised by BHRA Fluid Engineering.

Cranfield, Bedford: BHRA Fluid Engineering, 440pp.

PRANDLE, D., FUNKE, E.R., CROOKSHANK, U.L. & RENNER, R. 1981
The use of array processors for numerical modelling of tidal estuary dynamics.

pp.2413-2432 in vol.3, Proceedings of the seventeenth coastal engineering conference, March 23 to 28, 1980, Sidney, Australia. 3 vols.

New York: American Society of Civil Engineers. 3171pp.

PRANDLE, D. 1982
The vertical structure of tidal currents.
Geophysical & Astrophysical Fluid Dynamics, 22, 29-49.

PRANDLE, D. 1982

The vertical structure of tidal currents and other oscillatory flows.

Continental Shelf Research, 1, 191-207.

PROCTOR, R. 1979
Residual circulation in the Irish Sea. (Abstract of paper presented at the 3rd U.K. Geophysical Assembly, 2-5 April, 1979, University of Southampton).
Geophysical Journal of the Royal Astronomical Society, 57, p.284.

PROCTOR, R. 1981

Mathematic modelling of tidal power schemes in the Bristol Channel.

pp.33-51 in, 2nd International symposium on wave and tidal energy, Cambridge, 23-25 September, 1981, organised by BHRA Fluid Engineering.

Cranfield, Bedford: BHRA Fluid Engineering, 440pp.

PUGH, D.T. & VASSIE, J.M. 1979

Extreme sea levels from tide and surge probability.

pp.911-930 in vol.1, Proceedings of the sixteenth coastal engineering conference, 1978, Hamburg, Germany. 3 vols.

New York: American Society of Civil Engineers. 3060pp.

PUGH, D.T. 1979

Sea levels at Aldabra Atoll, Mombasa and Mahe, western equatorial Indian Ocean, related to tides, meteorology and ocean circulation.

Deep-Sea Research, 26A, 237-258.

PUGH, D.T. & VASSIE, J.M. 1980
Applications of the joint probability method for extreme sea level computations.
Proceedings of the Institution of Civil Engineers, Part 2, 69, 957-975. Discussion: Ibid, 71, 1981, 971-976.

PUGH, D.T. 1981
Tidal amphidrome movement and energy dissipation in the Irish Sea.
Geophysical Journal of the Royal Astronomical Society, 67, 515-527.

PUGH, D.T. & RAYNER, R. 1981
The tidal regimes of three Indian Ocean atolls and some ecological implications.
Estuarine, Coastal and Shelf Science, 13, 389-407.

PUGH, D.T. 1982
Estimating extreme currents by combining tidal and surge probabilities.
Ocean Engineering, 9, 361-372.

STATE PARTIES AND PROPERTY OF THE PROPERTY OF

- PUGH, D.T. 1982

  Permanent Service for Mean Sea Level: annual report of activities 1981.

  IUGG Chronicle, No.154, 69-71.
- PUGH, D.T. 1982
  A comparison of recent and historical tides and mean sea-levels off Ireland.
  Geophysical Journal of the Royal Astronomical Society, 71, 80%-815.
- PUGH, D.T. & FAULL, H.E. 1983
  Tides, surges and mean sea level trends.
  pp.59-69 in, Shoreline protection. (Proceedings of a conference organised by the Institution of Civil Engineers, Southampton, 1982).
  London: Thomas Telford. 248pp.
- PUGH, D.T. 1983
  Coasting along: a review of 'Continental Shelf Research' and 'Coral Reefs'.
  Times Higher Education Supplement, 16 September, 1983.
- RAE, J.B. 1980
  Offshore tide gauges.
  pp.51-65 in, Advances in hydrographic surveying. (Proceedings of a one-day seminar organised jointly by the Hydrographic Society and the Society for Underwater Technology.)
  London: Society for Underwater Technology. 76pp.
- ROBINSON, I.S. 1979

  The tidal dynamics of the Irish and Celtic Seas.

  Geophysical Journal of the Royal Astronomical Society, 56, 157-177.
- THOMPSON, K.R. 1979

  Regression models for monthly mean sea level.

  Marine Geodesy, 2, 269-290.
- THOMPSON, K.R. 1980
  An analysis of British monthly mean sea level.
  Geophysical Journal of the Royal Astronomical Society, 63, 57-73.
- THOMPSON, K.R. 1981

  Monthly changes of coastal sea level and the circulation of the North Atlantic.

  International Council for the Exploration of the Sea, ICES C.M. 1931/C:11, Hydrography Committee, 17pp. & figs. (Unpublished manuscript).
- THOMPSON, K.R. 1981

  Monthly changes of coastal sea level and the circulation of the North Atlantic.

  Ocean Modelling, No.41, 6-9 & figs. (Unpublished manuscript).

KANDAN PARAMAN PARAMAN

- THOMPSON, K.R. 1981
  - The response of southern North Sea elevations to oceanographical and meteorological forcing.
    Estuarine, Coastal and Shelf Science, 13, 287-301.
- THOMPSON, K.R. 1982

  The influence of local winds and the southern North Sea on the level of the River Thames.
  - Estuarine, Coastal & Shelf Science, 15, 605-610.

- VASSIE, J.M. 1982
  - Tides and low frequency variations in the Equatorial Atlantic. Oceanologica Acta, 5, 3-6.
- WOLF, J. 1980
  Estimation of shearing stresses in a tidal current with application to the Irish sea.

  pp.319-344 in, Marine turbulence, (ed.J.C.J. Nihoul).

  (Proceedings of the 11th Liege colloquium on ocean hydrodynamics, 7-11 May 1979).

  Amsterdam: Elsevier. 378pp.
- WOLF, J. 1991

  Effects of turbulent wind fluctuations on wind-driven currents.

  (Abstract of paper presented at the 5th U.K. Geophysical Assembly, 6-9 April, 1981, University of Cambridge).

  Geophysical Journal of the Royal Astronomical Society, 65, p.282.
- WOLF, J. 1981
  Surge-tide interaction in the North Sea and River Thames.
  pp.75-94 in, Floods due to high winds and tides,
  (ed.D.H.Peregrine).
  London: Academic. 109pp.
- ZETLER, B.D., CARTURIGHT, D.E. & 3FRKMAN, S. 1977

  Some comparisons of response and harmonic tide predictions.

  Canada, Department of Fisheries and the Environment, Marine
  Sciences Directorate, Manuscript Report Series, No.53, 23-26.

  (Unpublished manuscript).
- ZETLER, R.D., CARTWRIGHT, D.E. & BERKMAN, S. 1979

  Some comparisons of response and harmonic tide predictions.

  International Hydrographic Review, 56(2), 105-115.

